Effect of Information Communication and Technology (ICT) on the Performance of Financial Institutions (A Case Study of Barclays Bank, Sunyani Branch)

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12 September 2019

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ABSTRACT

The study sought to examine the contribution of Information and Communication Technology (ICT) on performance of banks in terms of service delivery in financial institutions in Ghana. The high competition in the Ghanaian banking industry has forced rapid changes as a result of technological innovation, increased awareness and demands from customers. The study adopted both exploratory and descriptive research design. Qualitative research method was used in collecting data and data was analyzed qualitatively. The main instrument for collecting data was the structured questionnaire. A sample size of 50 respondents consisting of 8 staff members and 48 customers of Barclays Bank was used for the study. A structured questionnaire was the main data collection instrument. The purposive and systematic sampling techniques were used to obtain the required sample size. The main tool which was used for the data analysis was Statistical Package for Social Sciences. Frequencies and percentages were used to present the data in a tabular form. The limitation affecting the study was time and financial constraints. The study revealed that ICT has an appreciable positive effect on performance due to improved customer service delivery. This affects the growth of Barclays Bank. ATM service flaws such as withdrawal discrepancies, issuance of faulty cards and long time for applied ATM cards to arrive deter most customers from accessing the service. Following from this study, it is recommended, Barclays Bank enhances the performance of their ATMs and their networks to increase customers satisfaction.

INTRODUCTION

Information Technology (IT) is the automation of processes, controls, and information production using computers, telecommunications, software and ancillary equipment such as automated teller machine and debit cards (Johnson 2005). Information communication technology can be seen as the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numeric information by micro- electronics-based combination of computing and telecommunications devices. Whereas, in the past, information handling involved massive dependence on paper, the emphasis now has shifted to the creation, storage and transmission of information through tiny electrical impulses, synchronized through microchips (Balachandher *et al,* 2001)

In Sub-Saharan Africa, developments in information and communication (ICT) are radically changing the way business is done. Electronic commerce is now thought to hold the promise of a

new commercial revolution by offering inexpensive and direct way to exchange information and to sell or buy products and services. This revolution in the market place has set in motion a revolution in the banking sector for the provision of a payment system that is compatible with the demands of the electronic marketplace (Balachandher *et al,* 2001)

Banking in Ghana has gone through many changes in their service delivery in improving the quality of services they provide to customers. Barclays Bank Ghana has a worldwide reputation for delivery of customer services. The bank on the 14th of February 1917 was established as Barclays Bank DCO in the United Kingdom (Dominion Colonial Overseas).The name of the bank which applied to the division in Gold coast was later changed to Barclays Bank of Ghana Ltd in 1971. Barclays Bank Ghana is now a wholly owned subsidiary of Barclays Bank PLC in the United Kingdom. Barclays Bank Ghana Limited has an extensive retail and corporate banking network in the country, comprising 59 branches, 7 agencies, 10 Premier life Centers, 2 Premier Suites and 8 local business centers. Barclays is the first truly networked bank with 135 ATMs spread across 90 location nationwide via a state-of-the-art satellite communication system which ensures up-to-date data availability on customers account, anywhere in Ghana. Abdulsalam, O. D. (2006).
Traditional banking operations such as withdrawing and depositing money, checking of balances and requesting for bank statements were mainly through the manual banking systems of operation in 1971. However, these operations are now modernized by means of electronic banking system. Telephone, telex, and facsimile were employed to speed up and make more efficient the process of servicing clients. For decades, they remained the main information and communication technologies used for transacting bank business.

Later in the 1980s as competition intensified and personal computers (PC) got proletarian, advancement in technology various banks networked their branches and operations thereby making the one branch philosophy a reality. Standard Chartered and Barclays Bank pioneered this very important electronic novelty which changed this banking environment in the country. Bank started to use them in back-office operations and later teller used to service client. With advancement in technology various banks networked their branches and operations thereby making the one branch philosophy a reality. Standard Chartered and Barclays Bank pioneered this

very important electronic novelty which changed this banking environment in the country. Abdulsalam, O. D. (2006).

This in the long run is expected to improve on financial inclusiveness through reduction of transaction cost increasing convenience, availability and timeliness of transactions, and improving accessibility for better fund administration. However, customers have expressed their disgust through customer feedback forums, about the frequent ATM breakdowns, breakdown in network, and inability to access funds at other branches, referrals to branches due to network breakdown, identity theft and high charges on visa transactions.

REVIEW OF RELEVANT LITERATURE

Overview of Information Technology

This chapter concerns itself with a review of related literature. The purpose of the review is to look at observations made by researchers and writers on the subject, impact of ICT on performance of financial institutions, especially on Barclays. It also looks at the relevance of literature to this study and specific direction it can give to the researcher as regards the methodology, collection and analysis of data and final findings and recommendations of the study.

Information Technology (IT) is the automation of processes, controls, and information production using computers, telecommunications, software and ancillary equipment such as automated teller machine and debit cards (Yasuharu, 2003). It is a term that generally covers the harnessing of electronic technology for the information needs of a business at all levels.

Communication Technology deals with the Physical devices and software that link various computer hardware components and transfer data from one physical location to another (Laudon and Laudon; 2001). ICT products in use in the banking industry include Automated Teller Machine, Smart Cards, Telephone Banking, MICR, Electronic Funds Transfer, Electronic Data Interchange, Electronic Home and Office Banking. It is not easy to find a definition that clearly describes the difference between IT and ICT. In short, the definitions of both IT and ICT talk about hardware, software and networks by which information is retrieved, recorded and displayed

Laudon and Laudon, (2001), defined information technology as the technology which supports activities involving the creation, storage, manipulation and communication of information, together with their related methods, management and application.

Yasuharu, (2003) also defined IT as the technology of computers, telecommunications, and other devices that integrate data, equipment, personnel and problem-solving methods in planning and controlling business activities. French goes on to say that information technology provides the means for collecting, storing, encoding, processing, analyzing, transmitting, receiving and printing text, audio or video information.

These two definitions point out the fact that information technology may be seen as the broadly-based technology needed to support information system. These writers try to classify IT as collecting, storing and processing data into information. This can only be achieved through the use of technology. Seeing IT as a broadly-based technology is the study of systems like computers and telecommunication for storing, retrieving and sending information (Yasuharu, 2003).

The definition goes deeply into telecommunication while Oliver and Chapman are more concerned about the methods, management and applications used in bringing about change in how activities are created.

The role of computers and for that matter information technology in society is a large subject to consider. Computers are just one example of automation although they have special features. In a society which relies heavily on all forms of automation and on automated handling of information computers, IT is the main tool which is normally adopted. Information Technology is not just a subject which is taught in schools but also the methods and equipment's used in the management of many organizations. IT is not only the knowledge acquired, but using the knowledge acquired to bring about developments in the society Daniel (1999).

According to Abor, (2005). IT affects financial institutions by easing enquiry, saving time, and improving service delivery. In recent decades, investment in IT by commercial banks has served to streamline operations, improve competitiveness, and increase the variety and quality of services provided. According to Yasuharu (2003), implementation of information technology and communication networking has brought revolution in the functioning of the banks and the financial institutions. It is argued that dramatic structural changes are in store for financial services industry as a result of the Internet revolution; others see a continuation of trends already under way.

Traditional Banking System

Traditional banking may also be said to be the process of receiving, recording, processing, posting and delivery of accounting information on customers of banks without the use of any mechanized, computerized or any electronic device. Computerization in banking became common over the following decades as bankers quickly realized that much of their labour intensive information handling could be automated on the computer

Traditional Banking

A research by Adam (1999) showed that traditional or manual banking is the execution of the activities of banking such as borrowing, transfer, keeping of cash without the use of any electronic assorted device. In manual banking, the banker keeps records on customers in bulky books with hand writing.

The Concept of Electronic Banking

E-banking is the newest form of delivery channel for delivery banking services and products. To some extent, the meaning of e-banking varies among researchers. Daniel (1999) explains e-banking as the provision of banking services to customers through internet technology. However, (Singh and Malhotra, 2004) defines e-banking in a more comprehensive way as the deployment of banking services and products over electronic and communication network directly to customers. Products and services are delivered through electronic and communication networks such as ATMs, the Internet, mobile devices and telephones. Among these technologies, the increasing penetration of personal computers, relatively easier access to the internet and a wider diffusion of mobile phones has drawn the attention of most banks to e-banking (Boateng and Molla, 2006). Daniel (1999) on the other hand consider e-banking as a financial innovation that has been enabled by the creative use of emerging ICT and other business forces. The financial innovation incorporates ICT, customer, marketing, finance and strategy.

However, one common denominator which runs through the above three definition is the provision of services and products through a medium such as computer, television or mobile phone. E-banking is the product of different generations of electronic transactions. Since the 1990s, the scope of e banking has widened. Previously, it was virtually insignificant but now it is well-known to millions of users worldwide. Automated Teller Machines (ATMs) were perhaps the earliest examples of e-banking that provided customers with electronic access to banking. Later, phone banking was introduced which allowed users to call their banks on ordinary phones to perform banking transactions. Nonetheless, phone banking was superseded by Personal Computer (PC)

banking where customers have proprietary software installed on their personal computers by their banks to enable them bank from their homes.

With this medium, users are able to interact with their banks through a computer connected with dial up modem to a phone network. Currently, internet banking is the most recent of the several generations of systems. This mode of electronic banking is widespread in Austria, Singapore, Spain and Switzerland, Korea, and the Scandinavian countries. In these areas, about 75 percent of all banks offer internet banking services (Nitsure 2003).

According to Daniel (1999), the profitability of electronic banking delivery channel by banks is calculated not only on the basis of revenue generated by charging customers but also exploring other avenues for reducing operating cost. The implementation of e-banking ensures operational efficiency as it is evident that expenses on labour, premises, back-office paper work and facilities are minimized. Also, through electronic banking banks now deal directly with customers as compared to the traditional brick and mortar model where customers transacted business over the counter. According to (Boateng and Molla, 2006) profitability of banks can be determined by different e-banking capabilities possessed by banks and can be seen in two dimensions. Firstly, the use of electronic is banking delivery channels in serving customers. In developed countries, many banks began with the use of ATMs and have evolved to personal computer banking. Nevertheless, this evolution is not visible in recently established banks in developing countries.

In Africa, this evolution is visible in South Africa banking industry (Boateng and Molla, 2006). What appears to be the most commonly used electronic banking channel in Africa is the use of ATMs and most recently the emergence of mobile banking in Ghana. The slow evolution of e-banking in developing African countries has been the inability to rapidly adopt global technology to local requirements. Most developing countries lack adequate infrastructure, working capital and human capacity before the adoption of global technology, and thus difficult to achieve the benefits that come with e-banking initiatives.

The second is the sophistication of banking services delivered over electronic channels Sophisticated e-banking services range from one way information-push services where customers obtain information about the bank's products and services to information download. With information downloads services, customers are able to download account information and forms and also perform full transaction such as making transfers between accounts, bill payment and cards and loan applications electronically (Boateng, R. & Molla, A. 2006). These determinants

that, banks need to decide on what e-banking services to provide, to which customers and when and how to provide customers with their services.

The three definitions above shows some kind of similarities banks not looking at the profitability of e-banking delivery channels but rather other avenues which will reduce their cost of operation. In addition, Jayawardhena and Foley (2000) believe e-banking provides solutions to the inherent problems of traditional banking such as it being time consuming. As a result, it is eventually becoming a norm for banking institutions to encourage their clients to use electronic means of banking. Customers‟ acceptance of electronic banking saves banks considerably on operating and marketing cost, thus providing banks with economies of scale (Levinsohn, 1998). The use of electronic delivery in service provision also eases enquiries, saves time and improves service quality. Due to these benefits, Hutchinson and Warren (2003) report that electronic banking presently accounts for over 50 percent of all banking transactions. Hutchinson and Warren (2003) also identified four drivers of electronic banking:

Increasing demand of customers.

Increasing competition between banks and new bank entrants.

Banks relentless desire to exploit new ways to reduce operational cost and achieve efficiency.

Global deregulation of financial markets.

Moreover, looking at the above definitions, the benefits of electronic banking cut across them indicating the advantages over the traditional banking system. Again, as banks adopt electronic banking delivery of products and services, the problem of reducing operational cost at the expense of maintaining and developing customer relationships would be experienced. Hence as consumer preferences differ among customers, service provision must be structured in ways that satisfy all categories of customers.

Again, banks that successfully integrate new technology in their business activities need to understand the impact of technology based transaction systems on customer perceptions and behavior (Moutinho and Smith, 2000). The implication is that banks need to know what satisfies and keep customers and as well develop innovative ways of providing satisfactory services to customers. Customer satisfaction is created as a result of high degrees of convenience and user-friendliness of electronic banking facilities. Currently, evidence appears to suggest that customer growth is dependent on electronic banking (Katz and Aspen, 1997,).

Thus, banks should be cautious of the impact of e-banking on current and future relationships as it largely reduces, and in some cases eliminates personal contact points within an organization. It has therefore become necessary for banks to acknowledge that their growth to a large extent is dependent on their relationship with their customers, and to continue to strengthen that relationship.

ICT in Banking Operations

Today's business environment is very dynamic and undergoes rapid changes as a result of technological innovation, increased awareness and demands from customers. Business organizations, especially the banking industry of the 21st century operates in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic climate. Information and Communication Technology (ICT) is at the Centre of this global change curve. (Nitsure 2003), contend that managers cannot ignore Information Systems because they play a critical role in contemporary organization. They point out that the entire cash flow of most fortune 500 companies is linked to Information System.

Irechukwu (2000) lists some banking services that have been revolutionized through the use of ICT as including account opening, customer account mandate, and transaction processing and recording. Information and Communication Technology has provided self-service facilities (automated customer service machines) from where prospective customers can complete their account opening documents direct online. It assists customers to validate their account numbers and receive instruction on when and how to receive their cheque books, credit and debit cards.

The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness. ICT directly affects how managers decide, how they plan and what products and services are offered in the banking industry. It has continued to change the way banks and their corporate relationships are organized worldwide and the variety of innovative devices available to enhance the speed and quality of service delivery.

Harold and Jeff (1995) contend that financial service providers should modify their traditional operating practices to remain viable in the 1990s and the decades that follow. They claim that the most significant shortcoming in the banking industry today is a wide spread failure on the part of

senior management in banks to grasp the importance of technology and incorporate it into their strategic plans accordingly.

Irechukwu (2000), claimed that only banks that overhaul the whole of their payment and delivery systems and apply ICT to their operations are likely to survive and prosper in the new millennium. He advices banks to re-examine their service and delivery systems in order to properly position them within the framework of the dictates of the dynamism of information and communication technology. The banking industry in Nigeria has witnessed tremendous changes linked with the developments in ICT over the years. The quest for survival, global relevance, maintenance of existing market share and sustainable development has made exploitation of the many advantages of ICT through the use of automated devices imperative in the industry.

Several authors have conducted investigation on the impact of ICT on the banking sector of the Nigeria economy. Agboola et al (2002) discussed the dimensions in which automation in the banking industry manifest in Nigeria. They include:

(i) Bankers Automated Clearing Services: This involves the use of Magnetic Ink Character Reader (MICR) for cheque processing. It is capable of encoding, reading and sorting cheques.

(ii) Automated Payment Systems: Devices used here include Automatic Teller Machine (ATM), Plastic Cards and Electronic Funds Transfer.

(iii) Automated Delivery Channels: These include interactive television and the Internet.

Agboola (2001), studied the impact of computer automation on the banking services in Lagos and discovered that Electronic Banking has tremendously improved the services of some banks to their customers in Lagos. The study was however restricted to the commercial nerve center of Nigeria and concentrated on only six banks. He made a comparative analysis between the old and new generation banks and discovered variation in the rate of adoption of the automated devices.

Aragba-Akpore (1998) wrote on the application of information technology in Nigerian banks and pointed out that IT is becoming the backbone of banks' services regeneration in Nigeria. He cited the Diamond Integrated Banking Services (DIBS) of Diamond Bank Limited and Electronic Smart Card Account (ESCA) of All States Bank Limited as efforts geared towards creating sophistication in the banking sector. Ovia (2000) discovered that banking in Nigeria has increasingly depended on the deployment of Information Technology and that the IT budget for banking is by far larger than that of any other industry in Nigeria. He contended that On-line system has facilitated Internet banking in Nigeria as evidenced in some of them launching websites. He found also that banks

now offer customers the flexibility of operating an account in any branch irrespective of which branch the account is domiciled.

Agboola et al (2002) discovered that Nigeria banks since 1980s have performed better in their investment profile and use of ICT systems, than the rest of industrial sector of the economy. An analysis of the study carried out by African Development Consulting Group Ltd. (ADCG) on IT diffusion in Nigeria shows that banks have invested more on IT, have more IT personnel, more installed base for PCs, LANs, and WANs and a better linkage to the Internet than other sectors of the Nigerian economy.

ICT usage in the Ghanaian Banking Sector

There are many forms of technological innovations or electronic delivery channels adopted by banks. Technological innovations have been identified to contribute to the distribution channels of Banks. The electronic delivery channels are collectively referred to as Electronic Banking. Electronic Banking is really not one technology, but an attempt to merge several different technologies. Each of these evolved in different ways, but in recent years different groups and industries have recognized the importance of working together. Bankers now see a kind of evolution in their business, partly, because the world has taken a quantum leap in the use of technologies in the last several years. The various electronic delivery channels are discussed below:

Automated Teller Machines (ATMs)

Rose (1999), describes ATMs as follows: "an ATM combines a computer terminal, record-keeping system and cash vault in one unit, permitting customers to enter the bank's book keeping system with a plastic card containing a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank's computerized records 24 hours a day". Once access is gained, it offers several retail banking services to customers. They are mostly located outside of banks, and are also found at airports, malls, and places far away from the home bank of customers. They were introduced first to function as cash dispensing machines. However, due to advancements in technology, ATMs are able to provide a wide range of services, such as making deposits, funds transfer between two or accounts and bill payments. Banks tend to utilize this electronic banking device, as all others for competitive advantage. The combined services of both the Automated and human tellers imply more productivity for the bank during banking hours. Also, as it saves customers time in service delivery as alternative to queuing in bank halls,

customers can invest such time saved into other productive activities. ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period of time than human tellers (an average of about 6,400 transactions per month for ATMs compared to 4,300 for human tellers (Rose, 1999). Furthermore, as the ATMs continue when human tellers stop, there is continual productivity for the banks even after banking hours.

Telephone Banking

"Telebanking (telephone banking) can be considered as a form of remote or virtual banking, which is essentially the delivery of branch financial services via telecommunication devices where the bank customers can perform retail banking transactions by dialing a touch-tone telephone or mobile communication unit, which is connected to an automated system of the bank by utilizing Automated Voice Response (AVR) technology" (Balachandher et al, 2001). According to Leow (1999), telebanking has numerous benefits for both customers and banks. As far as the customers are concerned, it provides increased convenience, expanded access and significant time saving. On the other hand, from the banks' perspective, the costs of delivering telephone-based services are substantially lower than those of branch based services. It has almost all the impact on productivity of ATMs, except that it lacks the productivity generated from cash dispensing by the ATMs. For, as a delivery conduit that provides retail banking services even after banking hours (24 hours a day) it accrues continual productivity for the bank. It offers retail banking services to customers at their offices/homes as an alternative to going to the bank branch/ATM. This saves customers time, and gives more convenience for higher productivity.

Personal Computer Banking

"PC-Banking is a service which allows the bank's customers to access information about their accounts via a proprietary network, usually with the help of proprietary software installed on their personal computer". Once access is gained, the customer can perform a lot of retail banking functions. The increasing awareness of the importance of computer literacy has resulted in increasing the use of personal computers. This certainly supports the growth of PC banking which virtually establishes a branch in the customers' home or office, and offers 24-hour service, seven days a week. It also has the benefits of Telephone Banking and ATMs.

Internet Banking

The idea of Internet banking according to Essinger (1999) is: "to give customers access to their bank accounts via a web site and to enable them to enact certain transactions on their account,

given compliance with stringent security checks". To the Federal Reserve Board of Chicago's Office of the Comptroller of the Currency (OCC) Internet Banking Handbook (2001), Internet Banking is described as "the provision of traditional (banking) services over the internet". Internet banking by its nature offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking. Service delivery is informational (informing customers on bank's products, etc) and transactional (conducting retail banking services). As an alternative delivery conduit for retail banking, it has all the impact on productivity imputed to Telebanking and PC-Banking. Aside that it is the most cost-efficient technological means of yielding higher productivity. Furthermore, it eliminates the barriers of distance / time and provides continual productivity for the bank to unimaginable distant customers.

Branch Networking

Networking of branches is the computerization and inter-connecting of geographically scattered stand-alone bank branches, into one unified system in the form of a Wide Area Network (WAN) or Enterprise Network (EN); for the creating and sharing of consolidated customer information/records. It offers quicker rate of inter-branch transactions as the consequence of distance and time are eliminated. Hence, there is more productivity per time period. Also, with the several networked branches serving the customer populace as one system, there is simulated division of labour among bank branches with its associated positive impact on productivity among the branches. Furthermore, as it curtails customer travel distance to bank branches it offers more time for customers' productive activities.

Electronic Funds Transfer at Point of Sale (EFTPoS)

An Electronic Funds Transfer at the Point of Sale is an on-line system that allows customers to transfer funds instantaneously from their bank accounts to merchant accounts when making purchases (at purchase points). A POS uses a debit card to activate an Electronic Fund Transfer Process. Rose, (1999), Increased banking productivity results from the use of EFTPoS to service customers shopping payment requirements instead of clerical duties in handling cheques and cash withdrawals for shopping. Furthermore, the system continues after banking hours, hence continual productivity for the bank even after banking hours. It also saves customers time and energy in getting to bank branches or ATMs for cash withdrawals which can be harnessed into other productive activities.

In Ghana, the earliest forms of electronic and communications technologies used were mainly office automation devices. Telephones, telex and facsimile were employed to speed up and make more efficient the process of servicing clients. For decades, they remained the main information and communication technologies used for transacting bank business. Later in the 1980s, as competition intensified, Ghanaian banks begun to use them in back-office operations and later tellers used them to service clients. Essinger, (1999). Advancements in computer technology saw the banks networking their branches and operations thereby making the one-branch philosophy a reality. Barclays Bank and Standard Chartered Bank pioneered this very important electronic novelty, which changed the banking landscape in the country.

Possibly, the most revolutionary electronic innovation in this country and the world over has been the ATM. In Ghana, banks with ATM offerings have them networked and this has increased their utility to customers. The Trust Bank Ghana in its earlier incarnation as Meridian Bank, in 1995 installed the first ATM (Owusu-Frimpong, 1994). Not long after, most of the major banks began their ATM networks at strategic positions. Ghana Commercial Bank started its ATM offering in 2001 in collaboration with Agricultural Development Bank. Many banks currently operate ATMs in Ghana. Today, not only does virtually every bank have them deployed outside most of their branches, but the new E-zwich national smart card payments platform is even presenting customers with the proposition of using any banks ATMs to withdraw money, not just their own. The ATM has been the most successful delivery medium for consumer banking in this country especially with the introduction of VISA. Customers consider it as important in their choice of banks, and banks that delayed the implementation of their ATM systems, have suffered irreparably. ATMs have been able to entrench the one-branch philosophy in Ghana, by being networked, so people do not necessarily have to go to their branch to do some banking (Owusu-Frimpong, 1994).

Another technological innovation in Ghanaian banking industry is the various electronic cards, which the banks have developed over the years. The first major cash card is a product of Social Security Bank, now SG-SSB, introduced in May 1997 (Essinger, 1999). Their card, ‘Sika Card’ is a value card, onto which a cash amount is electronically loaded. In the earlier part of year 2001, Stanchart launched the first ever debit card in Ghana. Its functions have recently been integrated with the customers’ ATM cards, which have increased its availability to the public since a separate application process is not needed to access it. A consortium of three (3) banks (EcoBank, Cal Merchant Bank and The Trust Bank) introduced a further development in electronic cards in

November 2001, called 'E-Card' (Abor, 2003). This card is online in real time, so anytime a client uses the cards, or changes occur in their account balance, their card automatically reflect the change.

Impact of ICT on Banking Operations

One area Information Technology has impacted heavily on the banking industry is the mobile cellular communication also known as global system of mobile communication (GSM) to assess account balance. The Global boom in mobile cellular communication has been outstanding. According to International Telecommunications Union (ITU) (2002) at the end of 1998, there were more than 3000 million subscribers around the world up from just 1 million in 1990. It is estimated that by the end of this decade, there will be more than a billion mobile users. Mobile cellular already account for almost one third of all telephone connection. The likelihood is that the number of mobile cellular subscriber will surpass conventional fixed lines during the decade of the next millennium. Both developed and developing countries are sharing in the information technologies revolution, in developed countries, users are flocking to mobile cellular as a complement to existing as substitute for shortages of fixed lines. Developing countries are now experiencing the highest level of mobile growth and it has entered into a new mass- market phase. The magic of mobile pre-paid is that it has turned telephone services into a mass-market commodity. Mobile has emerged as a mini-industry in its own right with 1998 services reverence of $155 billion (International Telecommunications Union (ITU, 2002).

RESEARCH METHODOLOGY

Research methods and procedures used to explore, investigate and evaluate the topic under study is an essential part of this and any other scientific research which acts in enhancing intellectual development. The methodology specifically describes the research model, research instruments, data collection process and the procedure for the data analysis.

Study Area

The study was conducted in the Sunyani Municipality. The Sunyani Municipality was chosen as the research location because of its proximity to the researcher, this is because the researcher lives in the area and most of the research was conducted when the researcher was on vacation. Secondly, the research has been conducted in several locations in the country but much has not been done about the Sunyani Municipality. The Sunyani Municipality is located in the heart of Brong Ahafo

Region, between Latitudes 70 55'N and 70 35'N and Longitudes 20 W and 20 30'W. It shares boundaries with the Wenchi District to the north, Berekum and Dormaa districts to the West, Asutifi District to the South and Tano South District to the East. It has a total land area of 2488 square kilometers. According to the 2010 population estimates, 123,224 people representing 5.3 percent reside in the city of Sunyani, with a growth rate, in the city, of 3.4% per annum. The economy is predominantly agrarian with approximately Of the employed population, about 25.5 percent are engaged as skilled agricultural, forestry and fishery workers, 28.1 percent in service and sales, 15.0 percent in craft and related trade, and 16.2 percent are engaged as managers, professionals, and technicians. Employment status and sector Of the population 15 years and older 48.4 percent are self-employed without employees, 7.8 percent are contributing family workers, 1.7 percent are casual workers and 0.4 percent are domestic employees (house helps). Overall, men constitute the highest proportion in each employment category except the contributing family workers and apprentices. The private informal sector is the largest employer in the district, employing 74.6 percent of the population followed by the public sector with 14.3 percent. Sunyani Municipality has a growth rate of three point seven six percent (3.76%). The population aged zero to fourteen constitutes 35.1 percent of the total population. The gender split is 49.9 percent for males and 50.1 percent for females. The dependency ratio is 1:1.8; average household size is 6.3 percent. Ethnicity is fairly homogenous. The Akan population is 85.4 percent of the total population. Mean annual per capita income was ¢170,967 and mean annual per capita expenditure was ¢215,256 as at 1996. More so, 34.1 percent and 15.7 percent constitute the population below the poverty line and the hard core poverty line respectively

Research Design

In this section, the research design is discussed. Research design is defined by Bryman and Bell (2007), as "a structure that guides the execution of a research method and analysis of subsequent data". Bryman and Bell go further to describe research design as a framework used in collecting and analyzing data. This framework is described by Saunders, *et al* (2007), as a general plan, which they indicate that it serves as a guide in answering the research questions. Research design is the plan and structure of the investigation in order to obtain answers to the research questions. The research design as discussed in this section therefore describes the framework for collecting data, giving clear reasons why a particular design was chosen among other alternatives.

Research can be formulated in certain ways depending on the objectives as indicated in the research problem. According to Zikmund (2000), research can be categorized into three namely exploratory, descriptive and explanatory. An exploratory research is a valuable means of finding out what is happening, seek new insights, ask questions and assess phenomena in new light (Robson, 2002). Exploratory approach is helpful when the researcher wants to clarify the understating of a problem. The great advantage is that it is flexible and adaptable to change.

Research Method Used

The study used qualitative research method in gathering data. Qualitative method of data collection is extremely varied in nature and information data collection methods are time consuming, therefore data is usually collected from a smaller sample than would be the case for quantitative approach therefore this makes qualitative research more expensive. The main methods for collecting qualitative data are individual interviews.

Research Instrument for Data Collection

Research includes collection of data and analysis of data. There are three strategies for researchers to collect data for case studies: interviewing, observing, and analyzing documents. When in-depth information is required, interviews are the preferred means of data collection. Denscombe (2000) maintains that there are four main methods for collecting data; these are: questionnaires, interviews, observations and documents.

Two set of questionnaires were designed to collect data from staff members and customers Essinger, J. (1999), states that explanatory research is usually conducted by administering questionnaires. The questionnaires for both staffs and customers comprised of three and four sections respectively.

Staff questionnaire was made up of the following sections: Section A was used to elicit demographic data of respondents. Section B on one hand dealt with set of items designed to elicit information on the view of the staff on the effect of computerization on performance of the bank. Section C covered items which enabled the researcher to evaluate the challenges which the bank faces with adoption of ICT.

On the part of customers, section A sought for demographic data of respondents. Section B also dealt with set of items to inquire about customers views on the effect of computerization on service quality Section C sought to examine the effect of branch network on customer service whilst

section D of the questionnaire assess customers views on the bank challenges with the adoption of ICT.

Population

According to Robson, (2002), a population can be defined as a set of elements (persons or objects) that possess some common characteristics defined by the sampling criteria established by the researcher. The target population of the study was both staff and customers of Barclays Bank Sunyani Branch.

Sampling Technique

Purposive and systematic sampling techniques were employed for this research. Nueman (2000) is of the view that purposive sampling enables the researcher to use value judgment to select cases that will best enable an individual to answer research questions and to meet objectives. He further suggested that this form of sampling is often used when working with very small samples such as in case study and when the researcher intends to select cases that are particularly informative (Nueman 2000).

Sampling Unit and Size

A sample size of 50 respondents made up of 8 staff and 42 customers were chosen for the study this was arrived at a as a result of observing sample sizes of similar studies and choosing a similar sample size.

Survey Technique

The researcher went to the bank premise on different occasions to distribute the questionnaire. On each visit 6 questionnaires were administered to customers till the 42 questionnaires were finished whilst that of the staff was given one-off. This was done to help reduce the biases that were likely to crop up.

On the part of the bank's customers, systematic random sampling was used to give each individual an equal chance to respond to the questionnaire. Nueman (2000), said systematic sampling technique is used because it guarantees desired representation of the relevant sub groups. Hence this can be said to be a representation of the total study.

Pre- Testing of the Instrument

According to Agyedu (1999), prior to using any instrument, its validity and reliability needs to be assessed to determine its accuracy and consistency. To enable the researcher to test the usability

of the questionnaires, pre-testing of the instrument was conducted. 5 questionnaires were given out to some staffs of the bank whilst 10 were given to sample customers.

Sources of Data

The study collected data from both secondary and primary sources. Secondary data were collected from Bank of Ghana reports, Barclays Bank annual report, as well as relevant journals on the subject. Primary data were collected mainly through the administration of structured questionnaire amongst the selected respondents. The detailed questionnaire is attached and marked as 'Appendix

Data Collection Procedure

Copies of the questionnaires were personally hand delivered to respondents who were given some few minutes to respond. Prior to the administration of the questionnaire, an introductory letter was collected from the HOD, Department of Accountancy to the Branch Manager, seeking permission for the exercise to be carried out. The procedure involved a lot of movement from one place to another by the researcher. The researcher explained the questionnaires to the respondent thoroughly after copies had been given to them. The purpose was to help the respondents to understand the content of the questionnaires and to do away with ambiguities, suspicions and also to be able to provide their independent opinions on the questionnaire items given to them. This also helps in establishing rapport with the respondents.

Data Analysis

Data analysis consists of examining, categorizing, tabulating, testing both quantitative and qualitative evidence to address the initial propositions of a study. Agyedu, (1999), suggested three steps to analyze the gathered information. Firstly, the data is sorted, organized and presented in a descriptive way. Secondly, the data is categorized into groups. Thirdly, inferences are made and models developed.

Quantitative and qualitative methods of data analysis were employed by the researcher. The results were subsequently computed into percentages. Percentages values which were not round figures were approximated to the nearest whole number, for ease of simplicity of interpretation. Diagrammatic representations of the statistical summaries of results were presented in the form of pie charts, bar graphs and tables.

The data collected at the end of the study was edited. The completed questionnaires were serially coded. The final analysis was tabulated. Since the researcher used descriptive research design, descriptive statistical analysis was used. Computer data analysis software such as SPSS and

Microsoft Excel were the main tools of data of analysis in order to interpret results. The Social Science Statistical Package (SPSS) was used to analyze the pre-coded questions. This package was used to compute percentages because it is easier to use. It was also used for making the tables used in discussion of the results. The open ended questions were analyzed by listing all the vital response given by the respondents. They were considered based on their importance to the research. This gave the general ideas about the research problem.

Quality of research

Researching requires the presentation of valid and reliable data. Yin (2003) suggested four tests in order to assess the quality of research: construct validity, internal validity, external validity, and reliability. In order to enhance the trustworthiness of the conducted case study, the concepts are discussed below in a critical manner.

Validity

Construct validity is concerned establishing correct operational measures for the concepts being studied. The construct validity is a critical parameter especially for case studies, because the gathered data is by nature subjectively interpreted by the researchers. It is the most complex type of validity; it is measuring an instrument to an overall theoretical framework which is used to determine whether the instrument confirms a series of hypotheses derived from an existing and at least partially verified theory (Silverman, 2006). In this Vein, instruments are not assessed in terms of how they relate to any criterion, rather to measures of concepts derived from a broader theory. It also refers to the extent to which measurement of questions actually measure the presence of those constructs intended to measure.

In order to counteract this threat, the researchers took various sources of evidence including both primary and secondary data into consideration, i.e. applying triangulation. However, the fact that web-pages not only from official and worldwide known organizations were included constitutes a potential source for errors. There was the challenge that respondents would be reluctant to reveal certain sensitive information this was overcome by using the right interview questions.

Merriam described internal validity to be the degree of match between the findings and the reality. Hence, a high level of internal validity leads to recommendations which are strategically important for the case companies. The fact that the concept of triangulation was applied contributes to high internal validity.

Reliability

According to Yin (2003), a case study is reliable if it would lead to the same findings and conclusions if another researcher would conduct the study again, i.e. being replicable. Yin (2003) defined "the goal of reliability is to minimize the errors and biases in a study. The researcher counteracted low reliability with the concept of triangulation, and carefully documenting the conducted field study for minimizing the risk of misinterpretation. Moreover, the informal and trustful atmosphere during the interviews reduced the threat of errors. Due to the above mentioned issues, the Researcher regards the case study to be reliable. If conducted by other researchers again, the same conclusions might be found.

In order to answer the research questions for this study, the data collection instrument (i.e. questionnaire) contained various questions, asked under different constructs to determine the impact of ICT on Financial Institutions in Ghana.

Ethical considerations

The ethical considerations that guided this study were those presented by Yin (2003). They indicated that participation in research should:

• be voluntary and informed consent;

• ensure there is no harm to participants;

• be anonymous and confidential; and

• not deceive subjects.

***Voluntary and informed consent*:** the researcher explained the purpose of the research to the respondents and solicited their consent before giving them the questionnaire.

***No harm to participants*:** It was agreed that results of the research will be shared with the respondents in order for them to confirm that it accurately reflects the views they shared during the interview and no part of it embarrass them or injures the reputation of their bank.

Anonymous and confidential: It was agreed that the names of the respondents would not be mentioned in the research results. This will ensure that comments are not directly attributable to individual respondents in order to guard against confidentiality issues with the public. This also helped to remove some bias since interviewees were comfortable discussing the issues.

***Deceive subjects*:** In order to avoid deception of identity, the researcher introduce himself before each interview and the researcher also explained the objectives of the research for them to also understand the objectives of the research before the respondents were handed the questionnaire.

DATA ANALYSIS AND DISCUSSIONS

Personal Data

This section presents background information on respondents in terms of gender, level of educational, occupation and position held. Such analyses are imperative because the background of the respondents helps generate confidence in the reliability of data collected and eventually the findings of the study

Gender of Respondent

Table 4.1 below shows the frequency distribution of 50 respondents selected for the study. The respondents made up of 32 males constitute the highest with 59% whiles the remaining 18 constituting 41% were females.

Table 4.1 Gender of respondents

GENDER	NUMBER OF RESPONDENTS	PERCENTAGE (%)
MALE	32	59
FEMALE	18	41
TOTAL	50	100

SOURCE: Field Data (2016)

Age of Respondent

Table 4.2 shows the age distribution of the respondents, 60% respondents out of the 50 respondents are between the ages 18-40 years old whereas, 34% are between the ages 41-60 years. In addition, 6% of respondents are above 60 years. This is an indication that the bank's customers, mostly fall within the working class, who definitely fall within the age range of

18- 60 years. -

Table 4.2 Age of Respondent

AGES	NUMBER OF RESPONDENTS	PERCENTAGE (%)
18-40	30	60
41-60	17	34
ABOVE 60	3	6
TOTAL	50	100

SOURCE: Field Data (2016)

Occupations of Respondents

Table 4.3 Occupation of Respondents

OCCUPATION	FREQUENCY	PERCENTAGE (%)
EMPLOYED	22	54
SELF-EMPLOYED	8	13
UNEMPLOYED	6	10
STUDENT	11	18
OTHERS	3	5
TOTAL	50	100

SOURCE: Field data (2016)

At the Sunyani branch of Barclays Bank as shown in (Table 4.2), 54% of respondents were employed, 13% were self-employed, 6 % were unemployed, 18% were students and 5% fell under others. This indicates that majority of customers who accesses the bank's services are employed and this becomes an added advantage since the employed are more likely to give a fairer assessment of ICT impact on the bank performance than other customers.

Educational Level

The question was posed to find the educational level of the respondents and since the level of education to a larger extent determines the level of understanding of the questionnaire items. Such an understanding determines the quality of responses given. 27 of the respondents have completed their tertiary education, 13 of the respondents are Senior Secondary school graduates and 10 of the respondents have completed Basic School (JSS). The deduction from the above statistics is that most of the respondents have degrees; hence their understanding of issues concerning ICT is most likely.

Quality of Service of Barclays Bank with Respect to Computerization

In this section, the researcher analyzed the effect of computerization on service quality in meeting customer satisfaction. This is an effort to answer research question one which states: 'Does computerization improve service quality?' The research delved into the effect of computerization on service quality in meeting customer satisfaction at Barclays Bank Sunyani Branch. Questionnaire items 4, 5 and 6 in appendix A and B of both the customers and staff questionnaire were used to obtain the required data. This aspect is line with information acquisition and database management which leads to improved customer satisfaction and needs Robson, C. (2002),

Customers' Response on Service Quality in Terms of Computerization

Table 4.4 Customers' response on service quality in terms of computerization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Excellent	3	10	10	10
	Very Good	23	41	41	51
	Good	20	38	38	89
	Bad	4	11	11	100
	Total	50	100	100	

SOURCE: Field data (2016)

Table 4.2 shows the responses of customers about their view on the bank service quality in terms of the computerization of its operations. 10% of the bank's customers believed the computerization of the bank's operation to be excellent, 41% replied very good, 38% answered good and 11% claimed it is bad. The figures above indicate that customers accept that computerization has impacted on service quality and will wish for constant update of such facilities to enhance better service delivery. According to Zhen-Wei Qiang et al. (2006) the ability to transfer information seamlessly through shared electronic files and networked computers would improve the efficiency of business processes such as documentation, data processing, and other back-office functions and increase sophisticated ICT applications such as customer resource Management (CRM) and electronic data interchange. This finding comes to support this assertion.

Staff's Response on Service Quality in Terms of Computerization

Table 4.5 Staff's response on service quality in terms of computerization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	6	90	90	90
	NO	2	10	10	100
	Total	8	100	100	

SOURCE: Field data (2016)

As to whether the present computerization of Barclays Bank has enabled the bank to improve upon its service quality, the following information was obtained from the staff. From Table 4.4 above, 90% of respondents said that computerization has improved on their customer service with only

10% percent saying the opposite. This indicates that computerization has improved the service delivery of the bank. The major reason given by staff was that, it has enhanced their data management processes and reduced manual entries of data. This view comes in to support that of customers' in Table 4.3. The above finding implies that the bank is at least abreast with modern banking state of art technology.

Staffs Response on Computerization and Reduction in Data Entry Processes and procedure

Table 4.6 Staffs Response on computerization and reduction in data entry processes and procedure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	6	70	70	65
	NO	1	15	15	80
	SOMEHOW	1	15	15	100
	Total	8	100	100	

SOURCE: Field data (2016)

When staff were asked to comment if computerization has helped reduce data entry processes and procedures at the bank, 70% of customers said yes whilst 15% answered no. with 20% remaining undecided according to Table 4.6. This indicates that computerization has improved data entry process and would help safe time in banking transactions.

Customers' View on Computerization and Reduction in Data Entry Processes and Procedure

Table 4.7 Customers' response on computerization and reduction in data entry processes and procedure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	40	75	75	75
	NO	4	10	10	85
	SOMEHOW	6	15	15	100
	Total	50	100	100	

SOURCE: Field data (2016)

When customers were asked to comment if computerization has helped reduce manual data entry processes at the bank, 75% of customers said yes whilst 10% answered no, with 15% remaining

uncertain. These figures from customers come to support staffs' stance that computerization has helped improve data entry processes at the bank as shown in Table 4.7.

Customers Perceptions Barclays Bank Customer Service.

The choice of a bank by an individual may depend on several factors such as its corporate image, technological status, span of network, service quality among other factors. In this section, the researcher plans to treat research Question 2 which states: "Can ICT change customers' perception of a bank service?" and Questionnaire item 8, 9 and l0 on appendix B were used to solicit the response.

Customer Satisfaction with Respect to the Banks Customer Service

Table 4.8 Customer satisfaction with respect to the Banks customer service

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
VALID	YES	27	53	53	53
	NO	15	31	31	84
	SOMEHOW	8	16	16	100
	TOTAL	50	100	100	

SOURCE: Field data (2016)

Table 4.7 shows the responses of customers on whether they are satisfied with the customer service of the bank. 53% responded positively. Whilst 31% responded negatively with 16% remaining undecided. This indicates that most customers are not satisfied with the bank's customer services. Most customers complained about poor customer relations of the bank and also the bank failing to handle their complaints when lodged.

Customers Perception on Banks Customer Relations

Table 4.9 Customers Perception on Banks Customer Relations

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
VALID	EXCELLENT	8	10	10	10
	AVERAGE	17	42	42	52
	POOR	25	48	48	100
	TOTAL	50	100	100	

SOURCE: Field data (2016)

Table 4.9 shows the customers ratings of the customer relations of the bank. l0% of customers rated it excellent whilst 42% rated it average. With 48 % rating it as poor. This indicates that the customer relation of the bank is poor as this revelation comes to defeat the bank's motto" "we serve you better '. This can deter customers from accessing new products of the bank especially those who finds it difficult to change their bank.

Branch Network of Barclays Bank and Its Impact on Customer Service

ln this section, the researcher plans to treat research Question 3 which states: "Does branch network improve customer service?" and Questionnaire item 7 and, 3 on appendix B were used to solicit the response. The table shows the data generated from customers' response.

Customers response on Barclays Bank Network and its effect on customer service

When customers were asked to comment if they could access all the services of the bank at its other networked branches across the country, all of the 50 respondents representing 100% answered yes. This indicates that the bank has fully achieved a networked status as customers are able to access their services at all branches nationwide. Customers were of the of the view that apart from cash deposit and ATM withdrawal services other services like cheque book requisition, statement requisition cheque withdrawals etc. has not been possible at the other branches of the bank. Customers claimed they had been many times referred to their main branch for such services. To rectify these problems, management must improve upon their information systems to enable free flow of information from one end to the other.

Problems and Challenges with ICT Adoption by Barclays Bank

In this section, researcher sought to find problems confronting both customers and management with the adoption of ICT by the bank. The objective here was to answer the research question: "Does ICT adoption comes with its challenges?" questionnaire items 9 and 12 on appendix A and questionnaire items 7 and 10 on appendix B.

Staffs' response to the operation of the ATM Service

Table 4.10 Staff's response to the operation of the Bank ATM Service

		FREQUENCY	PERCENTT	VALID PERCENT	CUMULATIVE PERCENT
VALID	EXCELLENT	2	20	20	10
	AVERAGE	3	40	40	55
	POOR	3	40	40	100
	TOTAL	8	100	100	

SOURCE: Field data (2016)

On the part of staffs concerning the ATM service of the bank as shown in table 4.10 above, 20% of the staffs said it was excellent whilst 40% replied it was good, with 40% claiming it to be poor. The view of 40% of staffs claiming that ATM service is poor exposes the weaknesses of the service. The key reason many gave were the frequent system link failure from their IT Headquarters in Accra. Whiles other also cited some of the problems already mentioned by customers above. Their views affirm that of customers above hence the bank needs to eliminate this flaw by creating more IT substations to reduce the incident of network failure.

According to McAndrews (2003), automated teller machines should offer significant benefits to both banks and their depositors by enabling depositors to withdraw cash at more convenient times and places than during banking hours. For quality of service is an essential factor involved in a service provider's ability to attract more customers.

Customers Patronage of Barclays Bank Internet Banking Service

Table 4.11 Customers patronage of Barclays Bank internet banking service

		FREQUENCY	PERCENT	VALID PERCENT	CUMULATIVE PERCENT
VALID	YES	18	35	35	35
	NO	32	65	65	100
	TOTAL	50	100	100	

SOURCE: Field data (2016)

In table 4.11, customers were asked if they also access the bank's services through their internet banking service apart from their physical presence at the bank premise, 35% said yes whilst 65 %

said no. This indicates the internet banking service of the bank has not been receiving much patronage. Among the reasons given by customers who did not access the service are as follows:

1. Lack of basic knowledge of computers limits their access to the facility
2. Fear of transacting business with the wrong person
3. Some see it to be time consuming with slow nature of our internet connectivity.
4. Others find it difficulty in trusting a completely mechanized system like internet banking in the case of financial matters.

Internet banking requires the development and implementation of a sound security procedure. This involves designing effective methods via which users can be authenticated in a remote environment. Specifically for Internet banking there is a real need for a way uniquely to identify and authenticate users without the possibility of their authenticity being cloned. Some technologies in use have been presented for meeting the security requirements for national, regional and global Internet banking assurance (Hutchinson and Warren, 2003).

Staff View on Customers' patronage of Barclays Internet Banking Service

Staff where asked to rate customers' usage of the Internet Banking Service. 5% said there was a high usage of internet banking whilst 15% answered it was average with 80% claiming it to be low This indicates that customers' patronage is low and these figures come to support the view of the customers themselves. Among the factors given by some of the staff for low patronage are as follows:

1. Most customers are addicted to teller service
2. Customers' often loose security and system errors in transacting business online.

Leelapongprasut et al. (2005) study on the internet banking service in Thailand, also found that reliability, namely the security system and information accuracy was the most important perspective for the user.

3. Undeveloped nature of internet banking culture in Ghana and others.

In this respect management can improve upon the internet banking culture by reducing cost of transacting business online and other incentives to entice customers. This can change customers' attitude towards innovation way of transacting business. As Internet banking should be viewed as an operational rather than a competitive instrument O'Rei1ly et al. (2003).

CONCLUSIONS AND RECOMMENDATION

Conclusions

The results suggest that improving the service quality through ICT experience will improve the overall customer perception of the quality of service provided by the bank. What emerges from the present study is that the customers of the bank appear generally satisfied with the technological aspects of Barclays. This implies Barclays should concentrate their efforts on those areas customers feel are most important (i.e. accuracy, timeliness, and convenience).

These are areas in which technology (capital expense) has been well utilized to replace more costly labor resources to accomplish essentially those services that the customer is accustomed to doing for himself. In other words, most customers are now familiar with the basic service provided by ATMs and bank websites, and thus expect that these services will be user-friendly, and in the case of ATMs, conveniently located and in secure positions. While some banks have already started implementing the sort of "augmenting" electronic bank delivery services that customers have come to expect, Barclays has taken their electronic service delivery to the next level in order to stay one step ahead of the competition. From the study, it was revealed that the adoption of ICT per se does not guarantee service quality but it depends on its efficient application to meet customer needs

Generally speaking, ICT adoption is both beneficial and challenging. Future studies should continue to advance the understanding ICT impacts and how it can efficiently be utilized to meet customer needs. ICT as a modern resource should be essential in providing a service but not to become an obstacle to its smooth delivery.

Finally, the trend toward greater Internet usage, especially among younger users, suggests that Barclays may need to re-evaluate their customer base on a more frequent and routine basis.

Recommendations

The study suggests that Barclays's provision of banking service through ICT need to concentrate its efforts in the following areas:

Barclays should find ways of making their electronic services more accessible. Installing more ATMs outlets is an issue, which customers consider very important and which is not being addressed to the customers' satisfaction. Barclays should also provide customers with a toll free number. This number could handle customer complaints and general feedback about the electronic banking services. This would not only provide a service to consumers that are free, but also provide the banks with valuable trends for future development on electronic services.

Barclays should develop their electronic facilities to cater for the elderly and disabled. ATMs that read out the keys pressed would aid the sight impaired as well as lowering the height of the ATM screens making the service available to people in wheel chairs.

The Bank must ensure that they have a stable network system and if possible, adopt the best and fasters network system for their operations with customers and adopt the mobile banking system of banking to serve customers.

The bank should nurse the internet banking culture in their customers in order to reduce customer physical presence at the bank which often results in queues and delays during transaction. But to boost customers' interest, Zugeldar et al (2000) mentioned that customer protection is the major legal issue associated with internet marketing.

Barclays Bank should decentralize its IT operations by creating more substations in individual regions. This will help improve efficient network connectivity and reduce pressure on their main server thus reducing system link disruptions which characterize the bank operations.

The management of Barclays should be well advised to conduct periodic marketing research studies on their own customers, to include developing a database containing both the demographic and psychographic profiles of its customer base. Such a database would then allow the management to make a more informed decision about the level of technological services needed at any one time in relation to the level of personal staffing to insure adequate service delivery. Although much additional study needs to be conducted to address the lack of information in this area, the current study hopefully provides future researchers with some basic areas in which to begin.

LIMITATION OF THE STUDY

Some of the limitations of this research work are enumerated below;

The lack of literature on the topic will be a major problem which makes the researcher to rely on primary data and interviewing.

Time factor can also be a constraint because of the limited time to carry out this research to be submitted to the department and defense.

Another shortcoming is the result of inadequate financial support; printing and coming out with a final work. However, the quality, validity and reliability of this work cannot be sacrificed on the alter for the constraints mentioned above.

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